HOUSTON
LEGEND

WEST / EAST / NORTH

Airports having Control Towers are shown in Blue, all others in Magenta. Consult Airport/Facility Directory (A/FD) for details, including airport lighting, restrictions, etc. For additional airport information, see Chart Supplement U.S.

AIRPORTS

- Other than hard surface runway
- Hard surface runway
- Hard surface runways 1200 ft. to 8069 ft. in length
- Hard surface runways greater than 8069 ft. or Some runways have 8069 ft. or greater
- Short dirt, turf or sand surface runway less than 1200 ft.
- Seaplane base
- Heliport
- Military
- Ultralight
- Glider
- Balloon
- Parachute jumping area
- Private

Airports with hard surface runway of 8069 ft. or greater are shown in Bold Magenta. Obstacle clearance and takeoff minimums may be affected by trees, terrain, or manmade objects. Consult appropriate FAR for takeoff minimums and departure procedures. Consult A/FD for details concerning runway slope, dimensions, etc.

Airports with operational control towers are shown as Blue Boxes. Consult A/FD for details concerning operational hours.

ADDITIONAL AIRPORT INFORMATION

- Private Flight Information Service (PFIS) available on frequency indicated
- Military - Other than hard surface, all military airports are shown in Bold Magenta. Consult A/FD for data on landing areas (hard surface runway, turf, etc.)
- Military Training Route (IFR)
- Military Training Route (VFR) 1500 ft. or greater below 3000 ft. or greater
- Military Training Route (VFR) 1500 ft. or greater below 3000 ft. or greater

Military Training Routes (IFR/VFR) with route segments 1500 ft. or greater AGL are depicted. Route identification numbers are shown along the route. Military low altitude IFR en route charts contain military training routes in greater detail.

AIRPORT TRAFFIC SERVICE AND AIRSPACE INFORMATION

Only the controlled and nonpilot serviced airports are shown on Sectional charts. For a complete list of the class, refer to the A/FD.

- Class B Airspace
- Class C Airspace
- Class D Airspace (Shade D - see note in Airspace)
- Class E (SFC) Area
- Class E Airspace from 700 ft. above surface
- Class E Airspace from 1200 ft. above surface
- 3400 MSL / 1700 AGL — Effective hours of Class E airspace: Mon-Fri 6 statute miles
- 3400 MSL / 1700 AGL — Effective hours of Class E airspace: Mon-Fri 6 statute miles

Class E Airspace within all 700' AGL areas (Shaded Magenta) as shown above.

Class E airspace begins at 1200' AGL unless otherwise designated as shown above.

Class E airspace begins at surface where Class B or Class C airspace are indicated by narrow blue magenta.

Class E airspace 700 feet above World Aeronautical Chart (WAC) symbols.

Class E airspace 1200 feet above Sectional and VFR Terminal Area Charts.

- Class G Airspace
- Class G (SFC) Area
- Class G Airspace from 700 ft. above surface
- Class G Airspace from 1200 ft. above surface
- 3400 MSL / 1700 AGL — Effective hours of Class G airspace: Mon-Fri 6 statute miles
- 3400 MSL / 1700 AGL — Effective hours of Class G airspace: Mon-Fri 6 statute miles

Class G Airspace within all 1200' AGL areas (Shaded Magenta) as shown above.

Class G airspace below an altitude designated as shown above.

Class G airspace up to but not including 14,500 ft. MSL is shown as bordered by narrow blue magenta.

Class G airspace the altitude World Aeronautical Chart (WAC) symbols.

- Prohibited Area
- Restricted Area
- Warning Area
- Military Operations Area
- Alert Area
- ADIZ - Air Defense Identification Zone
- MOA
- Military Training Route (IFR/VFR)
- Military Training Route (VFR)
- Instrument Route Transition Area
- Terminal Area Route
- Military Route

SPECIAL USE AIRSPACE

OBSTRUCTIONS

- 1000 ft. or higher AGL
- Less than 1000 ft. AGL
- Obstruction with high intensity white strobe lights (day/night)
- Obstruction with high intensity white strobe lights (day/night) and steady red lights (night)
- Obstruction on which high intensity white strobe lights (day/night) and steady red lights (night) are mounted on each of two towers
- Group Obstruction
- Wires Obstruction

NOTE(S): Elevations are MSL unless otherwise noted.

MISCELLANEOUS

- Aeronautical Light Beacon (may be operational only sunset to sunrise)
- Airport Beacon
- Heliport
- Seaplane Base
- Rotating Beacon
- Glider Operations
- Parachute jumping area
- Point of Interest
- VRP/VFR Waypoints
- Intersection
- Navaid/Reporting Point

TOPOGRAPHIC INFORMATION

- Aqueduct
- Road Aqueduct
- Railroad
- Railroad
- Power Transmission Line
- Aerial Cable
- Ferry Dock (Small), Ferry Dock (Large)
- Gaskins Tower
- Lighthouse
- Windmill or Wind Pump
- Coast Guard Station
- Dam
- Rock Pile
- Tank - Water, oil or gas
- Mine
- Mine or Quarry
- Recreation Area
- Spot Elevation
- Boundary of Park
- Large lakes are indicated by a Water-bordered mark or area tint of Bright Blue. Large rivers are indicated by a Water-bordered mark or area tint of Bright Blue. Small lakes and streams are indicated by white and blue intersion (stroke.)
- Canyon, Gorge
- Intermittent Stream
- Ridges and Mesas
- Levee
- Perennial Stream

RADIO AIDS TO NAVIGATION

- VHF Omni-Directional Range (VOR)
- VORTAC
- VOR-DME
- VOR/TACAN, no FSS Radio, no ATC, etc.
- Non-Directional Radio Beacon (NDB)
- NDB - DME

HOUSTON
SECTIONAL AERONAUTICAL CHART
SCALE 1:500,000

Lambert Conformal Conic Projection Standard Parallels 33°27' and 33°43'
Horizontal Datum: North American Datum of 1983 (World Geodetic System 1984)

82 TH EDITION (PRINTED) EFFECTIVE 11 MAR 2010

TO OBC12 23 SEP 2010

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and all other aeronautical data received by 14 JAN 2010

Information on this chart is essential to safe flight operations. Charts are updated every 56 days in the ADVERTISED EDITION. Check the appropriate NOTICE TO AIRMEN publication for any changes. Pilots cannot accept applicable NOTICES TO AIRMEN (NOTAMs) and other FLIGHT INFORMATION PUBLICATIONS (FLIPs) for the latest changes.

PUBLISHED IN ACCORDANCE WITH APPROPRIATE AIR CARTOGRAPHIC AGREEMENTS OF THE
SPECIFICATIONS AND AGREEMENTS - APPENDIX B
DEPARTMENT OF DEFENSE • FEDERAL AVIATION ADMINISTRATION

CONTOUR INTERVAL 500 foot
Mountain/Alaska elevations 2000 foot
Auxiliary contours 100 foot and 250 foot

HIGHEST TERRAIN elevation is 7771 foot
located at 31°33'N - 99°43'W

Spot elevations are in feet above mean sea level (MSL).
Approximate obstacle elevations are above mean sea level (MSL).
Non-public airports are indicated by symbol of type and "(NP)".
Military airports are indicated by symbol of type and "(MIL)".
Non-public heliports are indicated by symbol of type and "(NP)".
Elevations of airports, obstacles and terrain features are shown in feet.
Heights of obstacles are shown above mean sea level.
Water areas are shown in blue, land areas in shades of tan, green, brown, gray, and white.
Cultural features, including names and abbreviations (cities, towns, railroads, etc.), are shown in magenta.

ATTENTION:
THIS CHART CONTAINS MAXIMUM ELEVATION FIGURES (MEF).
The Maximum Elevation Figures shown in quadrangles bounded by ticked lines are the highest known elevations plus 100 feet. The MEF is the highest elevation, including terrain and obstructions (trees, towers, buildings, etc.).

Example: 13,456 feet → 135

773

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SECXXHOUSTON

PLOTTING DIRECT ROUTE ON NORTH/SOUTH RDG

There are approximately two minutes of latitude covering forward (to the north) and south of/aft of each meridian (RDG) of longitude. To plot a direct route between two points, such as A and B, which are not part of corresponding latitude-lob marks, one spot on each side of the chart and follow the steps below.

STEP 1 - Draw a horizontal line (MATCH LINE) through the departure point (POINT A) and the destination (POINT B). Extend a short line on the chart to the left or right of where your plot line crosses. (Figure 1)

STEP 2 - Place the straight edge of a piece of paper on departure point closer to the edge of the chart along the MATCH LINE. Hold a blank piece of paper along the MATCH LINE and continue extending beyond the edge of the chart. (Figure 2)

STEP 3 - Move the paper pivoting on the point so that a side edge of the paper aligns with the destination point (POINT B). Mark point B on the edge of the paper where it meets the chart edge. (Figure 3)

STEP 4 - Without moving the paper, on the same edge as point A, extend a short line on the chart from the center of the paper where it meets the chart edge. This is the MATCH LINE for the other side. (Figure 4)

STEP 5 - Turn the chart over and transfer the end of LINE B to the other side, and extend it enough to cross the MATCH LINE. (Figure 5)

STEP 6 - Take the short of (upper) edge of the paper and align the (top or bottom) edge of the paper with the MATCH LINE, pivoting on point A. Mark the RDG of the point of intersection of the MATCH LINE. Place a line from POINT A to the destination or intermediate point (POINT B). Extend a line from POINT B across the MATCH LINE to make a MARK C. Extend a line straight from that mark to the edge of the chart.

STEP 7 - Turn the chart back over and transfer MARK C to that side and extend to the MATCH LINE. Place a line from MARK C to the destination. (Figure 6)

CONTROL TOWER FREQUENCIES ON HOUSTON SECTIONAL CHART

Airports with operational towers are indicated on the face of the chart by the blue or magenta VFR floral (second frequency from bottom). Normal operating hours (daily unless otherwise noted) for these towers are 0700-2200 local. Part-time towers may operate continuously, but when they are not in operation, their frequencies are transferred to the associated Flight Service Station (FSS) or Remote Communications Outlet (RCO). Consult Airport/Facility Directory (A/FD) frequencies shown on the face of the chart and contact nearest FAA Flight Service Station (FSS) for specific hours of operation. Frequencies are listed in the following order: ATIS (when available), ground control, clearance delivery, tower, and approach control. All ATIS frequencies are listed in the table below. ATIS operational hours may differ from tower operational hours.

Unless otherwise noted, all control towers operate:
MON-FRI* 0700Z-2200Z (Monday through Friday)

CONTROL TOWER	OPERATES	TWR FREQ	GND CON	ATIS	AIRSPACE
ALVIN RGNL	0600-0500	118.3	121.9		
ARKANSAS INTL	CONTINUOUS	127.35 126.4	121.9	125.0	
BAYTOWN, EASTERWOOD FLD	0700-2200	118.3	121.9	132.1	2500
BOOTH ENGY FLD	0600-0500	118.3	121.65	132.1	4000
CUTTING FLD	0600-0100	118.3	269.7	135.85	
ELLINGTON FLD	0600-2200	118.3	121.65	132.1	3000 MSL
GEORGE BUSH INTERCONTINENTAL/HOUSTON	CONTINUOUS	133.55 135.9 (RWY 15L/33R)	121.9	119.65	7000
HOBBY	CONTINUOUS	118.7 (RWY 12L/30R) 120.5 (RWY 12R/30L)	121.8	124.4	
SUGAR LAND RGNL	0700-2200	118.4 (RWY 17/35) 120.9 (RWY 4/22)	121.9	134.55	
TEXAS GULF COAST RGNL	0700-2200	118.3	121.9	135.05	
WEST HOUSTON ARPT	0700-2200	118.3	121.9	132.1	2500
LAKE CHARLES RGNL	APR 0500-0500	118.3	121.9	135.05	4000
LAKE JACKSON BRAZORIA COUNTY	0700-2200	118.3	121.9	132.1	2500
SCHOLES INTL AT GALVESTON	0600-0500	118.3	121.9	120.5	
SOUTHWEST ARPT	0600-0500	118.3	121.9	132.1	
PEARLAND ARPT	0700-2200	118.3	121.9	127.4	
PEVETO, KING	0700-2200	CONTACT SAT-J	135.850	127.25	

CLASS B, CLASS C, TRSA, AND SELECTED ARSAA APPROACH CONTROL FREQUENCIES

FACILITY	FREQUENCIES	SERVICE AVAILABILITY
HOUSTON, CLASS B	DEP 135.1 (120.5 when 135.1 is busy) 124.4 APP 119.0 APP 120.9 APP 124.4	CONTINUOUS
HOUSTON, CLASS C	124.4 APP 119.0 APP 120.9 APP 124.4	CONTINUOUS
LAKE CHARLES, CLASS C	119.2 APP 120.9 DEP 120.9 HOUSTON CNTR	0500-0500 OCT-Dec-H
LAKE JACKSON, CLASS C	120.9 (120.5 DEP 120.9 HOUSTON CNTR	0600-0500 OCT-Dec-H
HOBBY CONTROL TWR	118.7 (RWY 12L/30R) 120.5 (RWY 12R/30L)	0-0500 0500
TEXAS GULF COAST RGNL	118.4 (RWY 17/35) 120.9 (RWY 4/22)	CONTINUOUS

SPECIAL USE AIRSPACE ON HOUSTON SECTIONAL CHART

Letters after area identify schedule use.
MOA and Alert Areas: Times of use H24 unless otherwise specified.
Other Areas: H24 - Continuous
(SR - SS) - Part time by NOTAM or Publication

S-Day same as by NOTAM
A-Activated - Use of this area by Civil Aircraft is prohibited.
W-Weekends and holidays by NOTAM
other - Refer to publication or notice cited in area title.
See A/FD/Chart for details

U.S. P-PROHIBITED, R-RESTRICTED, W-WARNING, A-ALERT, MOA-MILITARY OPERATIONS AREA

NUMBER	ALTITUDE	TIME OF USE	CONTROLLING AGENCY / REPORTING ESTABLISH	FREQUENCIES
R-5801 A	SFC TO 18,000 MSL	0600-0100 (NEXT DAY)	HOUSTON CNTR	
R-5801 B	11,000 TO 18,000 MSL	0600-0100 (NEXT DAY)	HOUSTON CNTR	
R-5802 A	SFC TO 18,000 MSL	H24	HOUSTON CNTR	
R-5802 B	10 TO 18,000	CONTINUOUS	HOUSTON CNTR	
R-5803	10 TO 18,000	CONTINUOUS	HOUSTON CNTR	
R-5105	10 TO 18,000	AIRSPACE AT INTERNAL	HOUSTON CNTR	
W-147 A	SFC TO 10,000	H24	HOUSTON CNTR	
W-147 B	500 TO 10,000 EXCL W-59B	0600-0100	HOUSTON CNTR	
W-147 C	3000 TO 10,000	0600-0100	HOUSTON CNTR	
W-147 D	3000 TO 10,000	0600-0100	HOUSTON CNTR	
W-228 A	SFC TO 10,000 EXCL W-59B	0600-0100	HOUSTON CNTR	
W-59 A	SFC TO 10,000	0700-2200	HOUSTON CNTR	
W-59 B	SFC TO 10,000	0700-2200	HOUSTON CNTR	
W-54 A	SFC TO 10,000	0600-0100	HOUSTON CNTR	
W-54 B	SFC TO 10,000	0600-0100	HOUSTON CNTR	
W-92 A	SFC TO 10,000	0600-0100	HOUSTON CNTR	
A-381	SFC TO 18,000	H24	HOU ACC	
A-632 A	SFC TO 10,000 EXCL W-59B	0700-2200	HOU ACC	
A-632 B	3000 TO 10,000	0700-2200	HOU ACC	
A-632 C	3000 TO 10,000	0700-2200	HOU ACC	

AREA NAME	ALTITUDE*	TIME OF USE	CONTROLLING AGENCY / REPORTING ESTABLISH	FREQUENCIES
TEXARKANA A	700 MSL TO 5,000 MSL	0700-2200 LOCALTIME	#1 ACC SAT	
TEXARKANA B	700 MSL TO 5,000 MSL	0700-2200 LOCALTIME	#1 ACC SAT	
HAMMETT	2500	0700-2200 LOCALTIME	FORT WORTH CNTR	135.75 346.75
IRON 1	100 MSL TO 3000	0600-0700 LOCALTIME	HOUSTON CNTR	
RANDOLPH 1 & 2	6000	0700-2200 LOCALTIME	HOUSTON CNTR	
MAVERICK 1A	6000	0600-0630 LOCALTIME	HOUSTON CNTR	
MAVERICK 2 HIGH	10,000	0700-0900 LOCALTIME	HOUSTON CNTR	135.97 (PRI)
MAVERICK 2 LOW	3000 TO 9,999	0700-0900 LOCALTIME	HOUSTON CNTR	135.97 (PRI)
MAVERICK 3 HIGH	10,000	0700-2200 LOCALTIME	HOUSTON CNTR	135.97 (PRI)
MAVERICK 3 LOW	3000 TO 9,999	0700-2200 LOCALTIME	HOUSTON CNTR	135.97 (PRI)
MAVERICK 4 HIGH	10,000	0700-2200 LOCALTIME	HOUSTON CNTR	LEGP 346.0
MAVERICK 4 LOW	3000 TO 9,999	0700-2200 LOCALTIME	HOUSTON CNTR	LEGP 346.0

*Altitudes indicate floor of MOA. All MOAs extend to but do not include FL 180 unless otherwise published in subdivision or on chart
E - Other times by Sch NOTAM.

CAUTION: Beware turbulence may occur over rugged terrain. See AIM.

CAUTION: This chart is primarily designed for VFR navigational purposes and does not purport to indicate the presence of all power transmission and telecommunications facilities, terrain or obstacles which may be encountered below reasonable and safe altitudes.

Flight Following Services are available on request and highly recommended in and around Class B, C, and TRSA areas.

CONVERSION OF ELEVATIONS

FEET (Thousands): 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
METERS (Thousands): 0 0.3 0.6 0.9 1.2 1.5 1.8 2.1 2.4 2.7 3.0 3.3 3.6 3.9 4.2 4.5 4.8 5.1 5.4 5.7 6.0

Features normally used as checkpoints for contacting VFR traffic are emphasized on this series of charts so they may be readily identified.

Fly Neighborly

Eugene L. Rosen Flight

The name shown is that used by the controlling personnel and is not necessarily the official name of the feature.

NORTH AMERICAN AEROSPACE DEFENSE COMMAND (NORAD) PROCEDURES

All aircraft operating in the U.S. national airspace, if capable, will maintain a 2-way radio on guard frequencies 121.5 or UHF 243.0. It is essential that pilots of civil aircraft understand the procedures to be followed when an unidentified "ADIZ" (within 5-8 hr intercept procedures). Additionally, if U.S. military fighter are intercept an aircraft and there are disagreement in the area of that aircraft, ambiguous will be intercepted by military aircraft. Intercepted aircraft should establish radio contact on 121.5 or UHF 243.0 and follow the intercepting/ visual ADIZ signals. Be advised that non-compliance may result in the use of force.

MILITARY TRAINING ROUTES (MTRs)

All IR and VR MTRs are depicted on charts updated every 56 days. Only the route centerline, direction of flight along the route and the route designator are depicted - route widths and altitudes are not shown.

Military pilots flying these routes may be operating at speeds in excess of 250 knots, they are instructed to see and avoid, and the aircrew's are instructed to contact the nearest FSS for more dimensions and current status for those routes affecting your flight.

Military training routes may be used by military aircraft operating under IFR or by military pilots in accordance with Operations Specifications.

DoD users refer to Area Planning AP/1B Military Training Routes North and South handout for current route.

HIGH DENSITY HELICOPTER ACTIVITY AREA FREQUENCIES

BRAZORIA, TX	123.0
CAMERON, LA	123.05
FREEPORT, TX	123.0
GALVESTON, TX	123.075 VFR
	134.45 IFR
GRAND CHENIER, LA	123.05
MORGANZA CITY, LA	123.05
MORGAN CITY, LA	123.05
PATTERSON, LA	123.05
PELICAN ISLAND, TX	123.05 VFR
	134.45 IFR
PORT O'CONNOR, TX	121.25
ROCKPORT, TX	122.5
SABINE PASS, TX	123.7

REPORTING CHART ERRORS

You are requested to inform us of chart errors and/or additions that come to your attention. Please write to: Aeronautical Publications, Inc., 8240 Nieman Road, Lenexa, KS 66214-1540 or call 913-338-1500. Frequently asked questions (FAQs) are answered on our website at www.nepa.faa.gov. See the FAQs prior to contact via mail for number or call. Please include your name, address and telephone number in case we need to clarify any information. If a current chart, a replacement copy will be returned.

Mail for FAA, National Aeronautical Charting Office, ATO-W, SSMC-4, Sta. N3306, 1315 East-West Highway, Silver Spring, MD 20910-3281.

Class G Airspace within the United States extends up to 14,500 feet MSL. At or just above this altitude all airspace is Class E Airspace, excluding the airspace less than 1500 feet above the terrain and certain special use airspace areas.

REGULATIONS REQUIRING FLIGHTS OVER CHARTED NATIONAL PARK SERVICE AREAS U.S. FISH AND WILDLIFE SERVICE AREAS, AND U.S. FOREST SERVICE AREAS

The landing of aircraft is prohibited on lands or waters administered by the National Park Service, U.S. Fish and Wildlife Service or U.S. Forest Service without authorization from the respective agency. Exceptions include 1) when forced to land due to an emergency beyond the control of the operator, 2) at officially designated landing areas, or 3) when such landing is specifically authorized by certain means.

All aircraft are required to maintain a minimum altitude of 2,000 feet above the surface over designated wilderness, wilderness study, primitive, and other areas administered by the National Park Service, National Wildlife Refuges, Big Game Refuges, Game Ranges and Wildlife Ranges administered by the U.S. Fish and Wildlife Service, and areas administered by the U.S. Forest Service. Exceptions include: FAA Advisory Circular (AC) 91-36, "Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas," defines the minimum as the highest terrain within 2,000 feet radius(s) of the route of flight, or the upper most limit of a certain class of airspace.

Failure to comply with these regulations may result in a civil penalty not to exceed $1,000 for each violation. Persons who violate these regulations may also be subject to prosecution from the respective agency. Exceptions include 1) emergencies involving the safety of human life, or 2) threat of serious property loss.

Penalties of National Park Service areas, U.S. Fish and Wildlife Service areas, and U.S. Forest Service Wilderness and Primitive areas

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HOUSTON

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